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Journal of Dentistry.

VOL. II. JUNE, 1883. No. 6.

ORIGINAL COMMUNICATIONS.

A HISTORY OF DENTISTRY FROM THE EARLIEST PERIOD TO THE PRESENT TIME.

BY GEORGE H. PERINE, D. D. S., NEW YORK.

DENTISTRY AMONG THE ANCIENT EGYPTIANS, ARABS, AND GREEKS.

In preparing a history of any art, it is the time-honored custom for the writer to search for its origin among the crumbling ruins of Italy, Greece or Egypt. To the builders of the pyramids, and the occupants of the massive and enduring tombs, which arise upon every hand along the banks of the Nile,—silent and sad reminders of man's mental and physical power and brief existence,—we naturally turn for the germ which has developed into an art or science of vast magnitude and utility at the present day. Historians have left us but limited material from which to cull facts with which to open a history of this character. Among the rude carvings and pictures of antiquity we find but little suggestive of dentistry, although in the ruins of Pompeii and Herculaneum, and the buried cities of the western hemisphere, dental instruments somewhat resembling those in use at the present day have been discovered.

HERODOTUS, who lived five hundred years prior to the beginning of the Christian era, and was the oldest Greek writer whose works are

extant, and the first among ancients to refer to the teeth in connection with the healing art, informs us that in his day there were in Egypt those who practiced certain specialties in medicine. Some turned their attention solely to the treatment of the eyes, others to the head generally, and some to the teeth only. An examination of the teeth of mummies fully confirms Herodotus' statement, for it proves to us beyond a doubt that dentistry was practiced—and by no means indifferently—by the ancient Egyptians, who were likely the first to give it attention as a specialty. Both filled and artificial teeth have been found in the mouths of mummies, the cavities in the former stopped with gold, and in some cases with gilded wood. Whether these fillings were inserted during life for the purpose of preserving the teeth, or after death for ornamentation, it is of course impossible to say. That the Egyptians were exceedingly fond of embellishing their persons with gold ornaments and bright-colored materials is a fact which has been clearly established, and the discovery of mummies—of exalted personages, no doubt—some organs of which were gilded and embellished with showy colors, proves that their fondness for display accompanied them even into the grave. Generally speaking, the teeth of Egyptian mummies have been found to be in a comparatively sound state; hence, it is likely the dental practitioner in the land of the Nile not infrequently experienced a sad lack of patients, and the encouragement he received consequently for the practice of his profession was limited. The teeth of a female mummy, purchased by M. Villotean at Journey, on the Nile, proved to be all present, and although they were worn down apparently from old age, were without exception free from decay. At the present day the Egyptians are noted for their good teeth, which are remarkable for their durability, seldom failing with old age. The replacement of lost teeth appears to have been practiced from an early date by both Egyptians and Hindoos. Belzoni and others have found in ancient Sarcophagi artificial teeth made from sycamore wood. It is also quite likely that ivory constituted a favorite material for the manufacture of teeth in the East, as it was so extensively used for various purposes by the people of that locality. Such artificial teeth as we refer to were probably held in place by ligatures, bands of cord, or gold and silver wire, which bound them to their natural neighbors.

CICERO, quoting from the *Law of the Twelve Tables*, says: "Let no gold be used, but if any one has had his teeth fastened with gold, let it be lawful to bury or burn that gold with the body."

In the museums of Paris and Berlin may be seen artificial teeth of Egyptian origin. Joseph Mayer, F. R. S., of Liverpool, is the possessor of an extensive and highly valuable collection of antiquities, among which are two pieces of artificial denture, one consisting of five teeth carved from bone, the other of two teeth of sycamore wood set in gold. Dr. Purland has also in his collection a tooth which was found pivoted to a stump in the head of a mummy.

Cases are related by Heradides, of Tarentum, and Herophilus, who practiced dentistry about 300 years before Christ, of persons who have died from the effects of the extraction of teeth.

HIPPOCRATES was born at Cos, 460 B. C., and was the first writer who refers to the use of the actual cautery in the removal of teeth (which practice was very likely borrowed from the Egyptians, whose preference for the use of heated iron, etc., is well known), compounded remedies for fetid breath, and removing discoloration from the teeth. He also explains how artificial teeth may be held in place by the employment of gold wire. His plan was, however, by no means original, for, as we have previously stated, the Egyptians undoubtedly resorted to a similar practice centuries before Hippocrates lived. That the ancients devoted particular attention to the care of their teeth may be inferred from the fact that not only Hippocrates but others, among whom we may mention Democritus and Mepalinus, made and used dentifrices. The former obtained his formula from a little book called Pythicus, which was written in verse, and derived its name from its author.

ERASOSTRATUS is credited with having deposited in the temple of Apollo, at Delphi, a "leaden tooth-drawer," as an indication of his opposition to the practice of extracting teeth not loose enough to be removed with the fingers. Indeed, it would appear that extraction was an operation by no means in favor with the ancients. Judging from the bas-reliefs and frescoes found at Thebe and Memphis, the instruments employed in dentistry in the early ages were decidedly primitive and clumsy. And in all cases where illustrations of dental operations have been discovered, the instruments represented are huge engines of torture, while the suffering of the person undergoing the operation is clearly depicted.

The early lessons in physiology, and the principles of pathology as given us by Aristotle, have proved of much value, and have left us greatly indebted to that staid old student, who lived 350 years before the beginning of the Christian era. Many of his principles are

accepted at the present day, particularly those which have contributed toward the foundation of our profession. He was not, however, in his judgment or opinions infallible, as is proved by his assertion that man has more teeth than woman, and that the same difference exists between the sexes of various classes of animals; and, again, that the teeth increase in length during life, which marks the difference between them and other bones.

CELSUS, who was a celebrated physician of Rome, was perhaps the first to recommend the file for the removal of caries of the teeth. His ideas regarding the treatment of the teeth were of an advanced character; indeed, he was the first to give scientific directions with regard to the extraction of teeth, which operation, however, he advised only in extreme cases. We find that he advocated the filling of decayed teeth, for which purpose he employed lead and other substances, and that he also advised the scarifying of the gums.

That comparatively little is found in the literature of ancient Greece and Rome, and still less in that of Egypt relating to the subject of dentistry, is a fact by no means surprising, notwithstanding we have conclusive evidence that the specialty was extensively practiced, for the reason that the fundamental principles of the healing art were enveloped in a vail of mystery, or hid, as it were, beneath a halo of superstition. Practitioners were held in great reverence by the people generally, and in order to retain their power, which undoubtedly elevated them in the social scale, they guarded their knowledge with religious zeal. The secrets of the profession were handed down from father to son through generation after generation. From the law of Hippocrates we quote the following:

"Holy things are communicated only to the initiated; but they must not be trusted to the profane before they have been initiated into the orgies of science."

That Hippocrates did not, however, follow to the letter his own precepts, is evident from the information he has given us of his knowledge and theories regarding the structure and origin of the teeth.

The opposition which existed among the Egyptians and Romans to such an extent against the operation of extraction, we find to be equally as strong with the Greeks and Arabs. Nowhere does Homer in his writings refer to it, which leads us to believe that it was rarely if ever performed in his time, although fillings are believed to have been not unfrequently made. In the Archæological Museum, London, are several skulls of ancient Greeks, the teeth of which contain a stone-

like filling. This fact furnishes strong evidence in favor of the impression which now exists regarding the practice of dentistry in Greece in past ages.

The Arabs and Greeks were both strong advocates of the application of the actual cautery as a remedy for diseases of the teeth and gums, but the former people did not admit of the possibility of supplying the place of lost teeth with those of an artificial character, although there were not wanting practitioners who recommended their use.

HEROPHILUS, also Erasostratus, gave the teeth much of their consideration, and made them the subject of many of their writings, and the discoveries they made and the knowledge they imparted to the world have proved of great value to science.

The operation of amputating an arm, which was made before the Alexandrian court and several medical experts of the time, and from which the patient recovered, established in the mind of Herophilus the opinion that a tooth could be extracted without danger or serious inconvenience to the subject of the operation.

The Arabs adopted several methods for the removal of teeth without pain, but not, we opine, without injury to the victim of their practice.

AARON, a physician who practiced his profession in Alexandria, used for this purpose colycinth. The Romans also prepared various chemical preparations for disintegrating and destroying troublesome teeth, or causing them to loosen and drop out. And it is recorded by the Latin poet, Martial, that the Roman ladies wore artificial teeth and were by no means opposed to them.

ALBUCASSIS, an Arabian physician, who lived about A. D. 1100, was from all accounts the first to recommend the transplanting of teeth; hence, it is clear that this practice was comparatively of modern origin. The following, which we quote from Pliny's Natural History, may not prove uninteresting:

"It is a matter beyond doubt that in young children the front teeth are produced at the seventh month, and nearly always those in the upper jaw first. These are shed in the seventh year, and are then replaced by others. Some infants are even born with teeth. Such was the case with Marius Curius, who, from this circumstance, received the name of Dentatus; and also with Cer. Papirius Carbo, both of them distinguished men. When this phenomenon happened in the case of a female, it was looked upon in the time of the kings as an

omen of some inauspicious event. . . . Some persons are born with a continuous bone in their mouth in the place of teeth; this was the case with the upper jaw of the son of Prusius, king of Bithynia. The teeth are the only parts of the body which resist the action of fire, and are not consumed along with the rest of it. Still, however, though they are able thus to resist flame, they become corroded by a morbid state of the saliva. The teeth are whitened by certain medical agents. They are worn down by use, and fail in some persons long before any other part of the body."

That dentistry constituted an acknowledged and important branch of medical science among the ancients is a fact clearly established, and that it was extensively practiced and by no means unsuccessfully, the records of the past which have been handed down to us, and the evidences which the tombs of those who lived in ages extremely remote to ours have yielded, furnish undoubted proof.

[To be continued.]

WHAT IS THE VITALITY OF A TOOTH?

BY CHARLES MAYR, SPRINGFIELD, MASS.

We often hear the expressions, "lowered vitality," "reduced vitality," "great vitality." What exact meaning and sense can we give to those words? To understand our explanation of those terms, one has to accept our explanation of what vital force is: *Vital force in a tissue is the resultant of all the forces active in that tissue of whose particular vital force we speak.* Thus, e. g., the vital force in the stomach is the resultant of the forces in the following components: the gross outer structure, the three different layers, the gravity, the circulation, the quality of the blood.

Those are the grossly mechanical outer factors. Then come the, so to speak, microscopical factors, viz.: The structure of the three layers, the arrangement of the different glands, the structure of those glands, the nature of the reticulum, and finally the size and quality of the reticulum.

Each of those factors is again a compound of many smaller factors, and thus our vital force in the stomach becomes an extremely complicated total.

Let us take the tooth. What is the vital force in a tooth? It is the resultant of all the forces therein. The very vitality of a tooth may prove its destructive or conservative element. The following factors

of the vital force in a tooth are important to us: Its chemical composition, its mechanical arrangement, its circulation. (About the first we know in detail only a little to a certain point.) We know the proportion of lime-salts and organic substance in dried teeth; some experiments have been made with live teeth, etc. The vitality of a tooth may be said to depend on those three factors, and changes in them will produce certain changes in the "vitality" of a tooth, viz.: Changes in the composition, changes in the mechanical structure, and finally changes in its circulation. The last is the most important factor of all the changes. The first two factors are more what we may term congenital factors, while the last depends on other circumstances. We may, therefore, for a moment neglect changes in composition and structure and chiefly consider the changes of the circulation, which is most likely to vary. We can no longer doubt that the most important element in the composition of a tooth is the organic albuminous protoplasm; called thus far as chemical processes are concerned,—or called bioplasson as far as its structure and the mechanical processes in it are being considered. The nature of this bioplasson can probably not alter much in its mechanical arrangement, this being given by the canaliculi of the tooth, but its composition may change. If we have two persons, say both weighing 180 pounds, the one a flabby, "fleshy" woman, the other a strong, healthy man, what is the difference? The bones? Not so much—hardly two pounds more in one case than in the other. The difference is in the water and fat; both are inert as far as the real working and superintending of the system is concerned; all the brain work of the system is done in the last instance by the protoplasmatic elements of the tissue, and there is where the difference comes in. The fat woman is made up of inert water and fat, while the healthy man shows a larger percentage of albuminous elements. The general structure of the reticulum in both bodies is very nearly the same, but the matter compounding it is stronger in the latter case than in the former, because of its greater concentration. Suppose the thigh muscles of both parties to be weighed, and both be found to weigh the same amount, the muscles in the first person will be composed of 90 per cent. fat and water, and 10 per cent. albumen; in the second person, of 75 per cent. fat and water, and 25 per cent. albumen. The second person will be two and one-half times stronger than the first because he has two and one-half times more organic albuminous substance, because the threads of the reticulum in the muscles probably owe their strength to the albuminous matter alone, and but little to the

water and fat. This will illustrate what we understand by vitality of teeth. What we said about the fat woman and the strong man is only an illustration, and an analogy of very close resemblance because of its dealing with the same working principle with the bioplasson. What are teeth with great vitality and teeth with low vitality? The first are teeth whose reticulum contains relatively little water and inert substances, while the second are teeth whose reticulum of bioplasson contains very much water. As albumen, however, has nearly the specific gravity of water, the weight of a tooth will not be changed very much by such a change in the composition, and the gross analysis for the lime-salts alone is not affected at all by those changes. *The proportion of water to protoplasm in a tooth is a very sure measure of its "vitality."* We have the more "vitality" the greater the percentage of albuminous substance to water. From this standpoint we can explain the lowering of vitality of teeth in consequence of diseases that affect the rest of the body. During all diseases we live more or less on our own meat. The brain is the last organ—the chief of the body—that will show a loss; all the other organs are eaten up in supplying the brain, and just as the muscles of a starving person shrink because the brain eats them up, thus also the bioplasson shreds of a tooth will shrink because the brain will eat it up; but the shrinkage will not bring in its course a diminution of the volume of the tooth. The structure does not allow of that very much; the vacuum will be filled out with water. Starving persons, as it is well known, drink large quantities of water, and if they are allowed an unlimited supply of water they are able to stand hunger many days longer than when deprived of it. While the albuminous and fatty contents of the tissues are consumed, water is taken into their place. Thus also with teeth. The teeth become richer in water but poorer in protoplasm.

Anything, therefore, which leads to consumption of protoplasm in the body, be it dropsy or consumption or pregnancy, must necessarily draw protoplasm from other tissues, where it is not absolutely needed. But the outside enemy has not got the consumption or pregnancy or anything of that kind. While, therefore, the system is weakening its fortifications, the enemy does not weaken, and, as a consequence, whenever there is a chance, that enemy will crowd in. If we see the forces of the attacking micro-organisms and those of the protoplasma within a tooth exactly balanced with a protoplasma of a strength, say of 20 per cent. of solid substance, and if by some disease the percentage has fallen to 10 per cent., the interior resistance has fallen to

one-half, and hence the increased liability to diseases by the relative change of forces. We do not enter into the still more remote detail of the How of the action of the protoplasm. We only wish to give our views about the "real handy" and often almost indispensable term, "vitality." Understood in this way, it seems to us to approach already somewhat nearer a clear conception than when it is used with the vague notion of a self-conscious entity, "vital force," something of a homunculus within the homo.

EDITORIAL.

DR. FRANK ABBOTT ON CARIES.

In the April number of the *Independent Practitioner* a very able paper of Dr. Frank Abbott, M. D., of New York, is published. The high standing of the author in the dental profession makes his paper of quite a special value. The paper of Dr. Stockwell, Etiology of Dental Caries; acids or germs, which? has produced something of a stir-up we might say all over the civilized dental world. We have read it in English and German journals, and several societies in America have made the paper a special study of their meetings, and our opinion is it deserves it. Also Dr. Abbott evidently thinks it of some momentous importance.

Facts, without being arranged in a certain logical manner, are no science, and structures made up of words, suppositions, guesses, hypotheses without the foundation of facts, are nothing but castles built on soap bubbles. The woeful state of theology with no real foundation proves the worthlessness of guesses without facts. It has been said against the paper of Dr. Stockwell that Dr. S. is no microscopist of a world-wide reputation himself. To compare small things with larger ones, we would say that Keppler, the great astronomer, equal to Newton, was an investigator who did not even have two suits of clothes paid for during all his life, and never had an instrument at his disposal, or if he had they were worthless for his purposes. Yet he established laws which have stood the most rigid test of centuries of investigation and calculation. Such men who are able to weigh evidences and out of evidences make a case, are just as much needed as those who hunt up the evidence. A little microscopy does not constitute a scientist. We do not wish to have the last remarks under-

stood as directed against Dr. Abbott; he has done more than a *little* microscopy, but there is many an amateur microscopist who thinks the world has to turn around his special instrument. One of the men who keeps the richest scientific shop is Dr. W. D. Miller, of Berlin, Germany, who during last year has made a great number of valuable investigations, and whose investigations possess so much greater value because he has had the assistance of one of the finest laboratories in the world.

Also Dr. Abbott evidently relishes a dish of his scientific kitchen. We feel flattered of course that Dr. Abbott also thought our investigations worth attention. It seems that many amateur theorists in the profession might be greatly benefited in their theories by keeping on their writing desks, printed in big type, the fact that a considerable number of analyses has shown that the lime-salts are present in the white friable mass generally found in advance of the common white decay. But how would the adherents of Dr. Watt fare with these facts? We do not wish to be considered conceited when we reiterate the results of these analyses: *The lime-salts in a tooth are not dissolved in advance of decay, they are there.* We don't wish to state they are there in the same state as in a healthy tooth, but they are there in the same chemical composition and the same proportion as in the healthy dentine. Dr. Abbott comes to the conclusion that the first impulse of decay "is under all circumstances due to the action of an acid which in a merely chemical way dissolves out the lime-salts from the enamel." Shall we accept it? Has not Dr. Abbott found many cases where there is but a mere speck of decay on the enamel, but where the whole enamel is undermined by large cavities of decayed dentine? Such cases are very common and in our opinion extremely illustrative. How could the acid bore through the enamel just one little hole, but underneath work such ravages? Dr. Abbott, it is true, finds the ultimate cause of the ravages in the irritation of the living matter by acids. That "acids are all very strong irritants of the living matter" we fail to make ourselves believe. We could cite almost any number of analogous cases where the supposed irritant effect of an acid on living matter does not exist. Then Dr. Abbott says irritation constantly applied will have in its course inflammation. Dr. Abbott speaks of this as if it was an entity, for he says, "after inflammation, swelling follows." Which of the two is the cause, the swelling or the inflammation? Inflammation could only be the cause, if inflammation was a something, but we think it is rather the reverse. The

swelling must precede before we can speak of inflammation. "This swelling of the living matter effects a *dislodgment* of the lime-salts." It is a good word! The little sentence, "In such cases the acid irritant formerly in the cavity is renewed," shows us that the devil is still there as bad as ever, only the house has been decorated and cleaned with brooms. (See gospel!) At the closing of this paper he asks a few questions, first: Why is it that the teeth of all persons do not decay the same? Well, Doctor, that is exactly the point under discussion. Do you think that it would be difficult to account for decay if all the teeth of all persons were decaying? If the teeth of all persons were decaying we would consider decay simply a physiological process, instituted by nature or God in a very providing and wise manner for dentists and parsons, for the first to live and the latter to talk unctuous nonsense about it. What we claim as the first cause is the congenital weakness of some parts of the enamel, which are born less strong than the other, and thus yield easier to the outer enemy, whatever it may be. The second question is that in ninety-nine cases out of one hundred, the lower front teeth, on which may be found the greatest number of organisms of any in the mouth, do not decay, while all others in the mouth do. How we would account for it? Well, Doctor, we might give you a column full of fine and beautiful logic, analogous reason, hypothesis, but as long as the microscopists in your profession have not yet made out what the ultimate structure of a tooth means, we shall confess, to our own shame, that we have to say we do not know. It might seem preposterous for us to answer questions three and four. We have attempted to answer them in many minor articles, not directly, perhaps, but from the train of reason there can be no doubt of what is meant, and we think some other defenders of the septic theory will be able to do better. As a general rule, a man favors the theory which seems to lie in his line of occupation. Appriori, one might think we should be delighted with Dr. Watt's chemical word-display —nascent, quiescent state, etc., what beauties!—since it would lie in our own line of occupation, but we are sorry to say that grossly chemical reactions seem to us to play only a subordinate part in the origin and growth of decay. Decay is a complex resultant, which seems to us to be made up of the following factors: First, a most preponderating influence of the congenital structure; secondly, a very important influence of live organisms of sepsis—germs; thirdly, a very small influence of the action of the acid or alkalies.

M.

KOCH'S BACILLUS AND ITS LESSONS.

The Therapeutic Gazette has a very interesting editorial on the above subject. He says: "It is true the existence of such a parasite has been quite strongly combatted by authority which commands respect, but a careful weighing of the evidence, *pro et con*, must, we think, satisfy the judicial mind that Koch has made out his case, and that the tubercle-bacillus is one of the facts of science."

. . . . . .

"Granted that the tubercle-bacillus is a fact, what are we to do with it? On the answer to this question rests the future treatment of consumption, prophylactic and curative, and the ingenuity of man will be directed both to the prevention of its entrance into the system and to its destruction in cases in which it has inadvertently, or in spite of prophylactic measures, found an entrance. When the means to these ends have been discovered, consumption will only occur as a result of negligence, and will prove fatal only as a result of improper or insufficient treatment. When these means shall have been discovered, medicine will have purged itself of the greatest of its approbia.

"Although the means of prophylaxis and cure, above referred to, are still veiled from our eyes (for we have faith in their existence), the discovery of the bacillus and its nature has already directed an intelligent treatment of consumption. It is fair to assume that it, like the germs of other diseases, is more or less constantly present in every community, floating about, as it were, seeking an opportunity to enter into systems in which it may propagate and work its mischief. It follows, then, that something more than the bacillus is necessary to produce consumption; it must have an appropriate soil. That soil, as is the soil in which other germs of disease take root and bring forth fruit, some thirty fold and some sixty fold and some an hundred fold, *is characterized by an absence of the power of vital resistance.* We know that the local lesion is by no means the first symptom of the affection which developes into full-blown tuberculosis. Preceding this there are dyspeptic disturbances, loss of appetite, emaciation, and a lowering of the vital forces. While these may not properly be a part of the consumption, they are what prepare the soil for the growth of the germ. It is fair to assume that the air-passages of those brought in contact with tuberculous patients frequently contain bacilli, *which, being met at the portals by the vital resistance furnished by the system in its average health,* fail to effect an entrance, degenerate, and are thrown off. It would follow, therefore, that *the main-*

tenance of the system at its full standard of vitality is the most effective prophylaxis against the ingress of the bacillus, which, when it gains admission, acts as a foreign body, and sets up the circumscribed inflammation which constitutes solidification, and which in turn breaking down, causes the tuberculous cavity.

"The discovery of the tubercle-bacillus antagonizes the theory of the hereditary nature of consumption, *per se*. While in very many instances the disease appears to run in families, it will hereafter be more correct to say that the *tendency* to it is hereditary, or, rather, that *the weakened power of resistance* to the entrance of bacillus is transmitted."

Change the words "bacillus" to germs or bacteria, "consumption and tuberculosis" to dental caries, and we have here a very good exposition of the germ theory of dental caries, together with the prophylaxis and cure of the same. The point on "vital resistance" of the tissues and general system is especially applicable and well stated.

MISSOURI DENTAL JOURNAL.

An editorial in the last *Missouri Dental Journal* announces that with this issue Dr. Spalding's connection therewith as editor and publisher ceases. "The publication office will now be removed to that active center of Western enterprise—Kansas City—and the future editorial guidance will be supplied from that city and its vicinity."

We are glad that the *Mo. Journal* is not to cease to exist, and trust that its change of climate will add to its vigor and enterprise. Many, however, will be sorry to have Dr. S. leave the editorial ranks, and will accord him their best wishes in his future plans and work.

WHAT IS THE "CAUSE?"

Will Dr. Catching be kind enough to demonstrate the "*cause*" that is assumed to produce the "*effect?*" The statement is often made that "*something*" precedes that which is termed "effect," but we are not informed just what it is. Don't suppose us any longer to be "weak enough to believe without thought or question," either the old or new.

A clear comprehension of the facts existing at the real line of conflict between the healthy and diseased tissue, as shown by the latest investigations, may possibly cause a falling "into line," and lead to a substitution of *assumed* "effect" for "cause."

CREMATION.

The subject of disposing of the last remains of the dead, by means of cremation, has seemed to be a little slumbering for the last few years. It seems to have reached a stage where the general public can no more be brought beyond it. It is rather an humiliating sight that in our century, boasting of so much enlightenment and independence of opinion, nothing but old fogyism and superstition should determine the course of events. Cremation is a question of vastly more every day importance than Mormonism, Baptism, Republicanism or Democracy. The amount of real heathenish and savage ceremonies, of all ways of mourning for the dead still practiced, shows no improvement upon those of the Chinese, or of the Hindoos, or Negroes thousands and thousands of years ago.

If one takes a walk in Boston and sees there, similar to a filthy Oriental city, in the center of most frequented thoroughfares, cemeteries with their uncouth, ugly gravestones and lying inscriptions praising some nobody who lived sometime ago, one must feel convinced of the truth of the theory of geologists and biologists, that it took thousands or perhaps millions of years for man to develop himself out of semi-apes.

The whole process of cremation, as compared with that of burial and rotting, has such an immense advantage that it would almost appear as an insult to any of our readers if we should attempt to draw their attention to any of them. We were present at a cremation in Dresden. The whole process was done in two and one-half hours, and what resulted was snow-white, clean and pure in every way. How does that compare with burial? After ten years, there still remain disgusting, offensive and repulsive masses which, even if they should have belonged to our most beloved ones, would never fail to fill us with the utmost aversion. It will take, of course, still many thousands of years, till people have come to the conclusion that a corpse represents some money value to the chemist; the ammonia which we could get out of it, the nitrogenous compounds, the illuminating gas, the glycerine, soap, etc., give to every corpse a value of at least $5.00 present money. If properly utilized, the corpses would rather become a source of income to a city than of immense expenditure. We personally should prefer exceedingly to be of some use after death, and not to laze a sleep of idleness in the filthy tomb, and we should be thankful to the man who would grind up our corpse for fertilizer. What a vastly higher idea of the fate of our corpses after death it is,

to be used for some progressive purpose, or to become a part of some plant, etc., rather than to be a source of disgust and a nuisance generally to every body, individuals as well as authorities.

Friends of progress, every where, do not relax your efforts in arousing people to think themselves rather than to accept without thinking, old notions and animalic conservatism. With conservatism, the world never would have advanced. If there is a spirit of evil and darkness in the world, it is the spirit of conservatism and ancestor-worship; if there is a spirit of good and light, it is that of progress, of free independent thinking, of reason. The nations who made mummies out of their dead have gone down to well-deserved annihilation.

WHAT WILL THEY DO?

The following is copied from the editorial columns of the *New England Medical Journal.* That it applies to the dental as well as the medical profession few can doubt who are conversant with the facts. But how are the "mills" which go on "grinding out" dental graduates by the hundreds, if not thousands, annually, to be "stopped?" Or how are they to be compelled to raise the standard of examinations at both ends of the course?

"At a low estimate, fifteen hundred students have been graduated at the different colleges through the country during the spring, and now arises the question, what will they do?

That the profession is now overstocked is apparent to any one who has made a most superficial examination of the matter. Every place is full to overflowing, and every year young men who were led to believe that the practice of medicine is the royal road to fortune and to fame, are from sheer excess of competition and crowding, forced to abandon the profession and seek some other mode of obtaining a livelihood, thus throwing away all the years of study and labor, on finding it unproductive.

Is it not a serious thing to lead these men to suppose that there is plenty of room and plenty of work when the profession is so full? What can ever repay them for the years of lost time studying for a profession in which there is little chance of gaining a livelihood, less of acquiring a fortune? The only remedy that seems to hold out any prospect of success is that it be made more difficult for them to graduate, by demanding preliminary examinations and a higher course of instruction, with proportionately difficult final examinations. But will

this ever be done? We fear not, so long as the medical colleges are owned by the faculties, and are dependent upon the number of students attending for their expenses and fees. One thing is certain: that the profession are alive to the fact that there are now more doctors than can obtain a decent living, and that something soon must be done to stop the mills that grind them out by the thousands annually."

MEETING OF THE SOUTHERN DENTAL ASSOCIATION.

The time of meeting has been changed to *Tuesday, July 31, 1883*. The meeting is to be held at Atlanta, Ga. We venture the assertion that if any Northern dentist feels disposed to attend that meeting of live Southern brethren he will be sure of a most cordial welcome. The change is made so as to accommodate any who may wish to attend the Southern and then go to the American at Niagara Falls. The Georgia State Dental Society also meets at Atlanta on July 30.

The State Board of Examiners of North Carolina would seem to have it in their power to provide that State, at least, with efficient dental practitioners, as the law provides that graduates, as well as non-graduates shall stand an examination before that Board. Missouri has also passed a law to regulate the practice of dentistry, New Hampshire and Vermont ditto. Massachusetts—well, her legislature and the code of ethics of the various dental societies within her borders make Massachusetts an easy prey to the "quacks" and "cheap Johns." The legislature ties the hands of the societies, and the societies in turn tie the hands of members by their code, and the above unprincipled rapidly growing class have a free course, and no effective obstacle thrown in their pathway.

Under "Societies" may be found the substance of the programme of the Union Meeting at Springfield, Mass., June 6, 7 and 8. Parties intending to be present may find it to their interest to note the arrangements for a reduction of railroad fare. A very large and interesting meeting is now certain.

Send us $1.00, with your name and address, for the N. E. Journal of Dentistry for seven months, commencing with the June number.

SELECTIONS.

BROMIDE OF ETHYL THE MOST PERFECT ANÆSTHETIC FOR SHORT, PAINFUL SURGICAL OPERATIONS.

BY JULIAN J. CHISOLM, M. D.,

Professor of Eye and Ear Diseases in the University of Maryland, Surgeon in Charge of the Presbyterian Eye and Ear Charity Hospital, Opthalmic Surgeon to the University Hospital, etc.

(Read before the Baltimore Academy of Medicine, December 5, 1882.)

[Reprint from the Maryland Medical Journal of Jan. 1, 1883.]

Three years since, when the Bromide of Ethyl was brought prominently forward as a substitute for chloroform by Dr. R. J. Levis and Dr. Laurence Turnbull, both of Philadelphia, I, with other surgeons, experimented with the new anæsthetic, with the intent of comparing its reputed advantages with the well-known agents, sulphuric ether and chloroform. I discarded it after a very short trial on account of its apparent inefficiency, and because of the very evanescent nature of the sleep induced by it. I found great difficulty in putting my patients to sleep; and when at last narcotised, they would suddenly recover consciousness at most awkward periods in the midst of eye operations, to my serious annoyance. In two cases, especially, in which I continued the inhalation from time to time as I would have done with chloroform, until upwards of an ounce of the bromide of ethyl was used, nausea and vomiting followed, which, in its severity and duration, I have rarely seen exceeded in the most sensitive of my chloroform patients. For twenty-four hours the sickness of stomach continued. The hospital ward in which the patients were lying had its atmosphere redolent with the garlicky odor of phosphorous, and the breath of these patients was offensive from the same smell on the day after the inhalation. For some months after this very unsatisfactory brief experience, my bromide of ethyl bottle remained corked. About this time great publicity was given to a death in the practice of Dr. Marion Sims, from ethyl administration, in which several ounces had been used, and the narcosis kept up for a long period. This was the first time that ethyl had been inhaled for anæsthetic purposes in New York city. This first fatal case was followed soon afterwards by a death under the use of ethyl in the practice of Dr. Levis, of Philadelphia. These two fatal cases put a very sudden stop to the use of bromide of ethyl in the United States.

Confiding in the statements of Drs. Levis and Turnbull, both of them surgeons of large experience, that the bromide of ethyl had good properties, I was still disposed to believe that the new and comparatively unknown anæsthetic possessed attributes which we had not succeeded in developing. I therefore again commenced experimenting cautiously with this new remedy. By degrees, as I became better acquainted with it, it secured my confidence. For the past year I have used it on an average at least once every day, often administering it four, five or six times, during the day's work in private practice and at the hospitals. Familiarity with its peculiarities and effects, and the discovery of the proper method of administering it, has taught me to value its advantages more and more highly, till now I consider it *par excellence the anæsthetic* to be used for any painful surgical operation which can be quickly performed. *Having found out how to use it, and what to expect from its administration, I can obtain the most brilliant results from it, and have become quite enthusiastic in its praises.*

In every patient, using the needful precaution, I have produced complete narcosis in less than one minute, often in from twenty to thirty seconds. A deep sleep which, however, will not last more than one or two minutes. From this speedily induced narcosis recovery is rapid and complete, with neither nausea nor heaviness, so that as a rule five minutes after the inhalation the patient is as much himself as if no anæsthetic had been used. Experience has taught me that these are the peculiarities of the bromide of ethyl when administered for anæsthetic purposes, and that as such they will prove of inestimable value to surgery.

The following very interesting cases, patients recently operated upon, will illustrate how thoroughly and speedily the brain resumes its full function after complete ethyl narcosis:

Miss M., a self-possessed little girl, eight years of age, desired to have an ugly squint corrected, and exhibited no timidity in witnessing the preparations needful for its performance. Prior to getting upon the table she had her collar loosened to remove any impediment to respiration. In doing so she took two roses from her dress and placed them on a vacant chair near by. She was then put on the operating table and the bromide of ethyl administered. A very few inspirations produced deep sleep, under which the tenotomy of the rectus muscle was performed. The ethylization and squint operation occupied fifty-six seconds: the time was taken by one of my assist-

ants. Within three minutes from the commencement of the narcotism the child was perfectly awake, and was ready to get from the table. When on the floor she walked at once to the chair, and within four minutes from the time that the anæsthesia was commenced she was engaged in pinning these roses into the front of her dress, with a composure which showed not only no present discomfort, but a complete oblivion of the experience through which she had just passed.

The second case, also one of convergent squint, was that of a boy, fifteen years of age, who seemed very anxious to get rid of his deformity. After getting on the operating table, before the medical class at the University of Maryland clinic, I told him that when the towel was placed over his face it would have a very choking sensation, but that he could not choke from it. I also showed him how to take quick and full inspirations, so that the suffocative sensations would entirely pass away before he had breathed a half dozen times. When the folded towel, upon which a drachm of ethyl had been poured, was placed over his face, he commenced a most active respiratory movement, which in a very few seconds quieted down into deep sleep. Within thirty seconds from the commencement of ethylization, narcotism was profound. The operation was commenced without delay, and the division of the tendon speedily consummated. The entire operation from the commencing ethylization to the perfection of the tenotomy did not exceed sixty seconds. A minute had not elapsed from the completion of the operation when he awoke, and jumping from the table to the floor of the amphitheatre, he cried out in a jubilant voice, "I am all right," much to the amusement of the medical class who had crowded the benches: a very different behavior from that which follows the inhalation of chloroform or ether. In this case the entire period, from the beginning of the inhalation, through the stage of complete narcosis, to perfect restoration, did not exceed two minutes.

A *third case* was that of a gentleman of extremely nervous temperament, who was disfigured by a tarsal tumor. On account of his dread of being operated upon, he had carried this ugly swelling on his lid for over a year. One Sunday morning he presented himself at my office with the request that I would operate upon him at once, making as a condition that I would give him chloroform. It is an established rule with me never to administer an anæsthetic without an assistant being present. Having explained the necessity for this course, I requested him to meet me at the University Hospital within

an hour, so that I could secure the presence and aid of the resident physician as my assistant. I anticipated his arrival and had everything prepared for his coming. I received him on entering the vestibule of the hospital and accompanied him at once to the amphitheatre. With no loss of time he got upon the table and was told to take full inspirations of the medicated vapor in spite of the suffocative feeling excited by the ethyl. As soon as the cone containing a drachm of bromide of ethyl was placed over his nose and mouth, he commenced a series of slow, deep inspirations, which terminated in full narcosis by the time the eighth inspiration was taken. His breathing was free, pulse strong, color of face bright, with the appearance in every respect of ordinary, deep, natural sleep. Desmarres' ring forceps or clamp soon secured the lid, the tumor was freely opened from the conjunctival surface, and by means of a cutting spoon the epithelial lining of the cyst was speedily scraped off. A few rapid rotations of the spoon effected this very promptly. This manipulation was a matter of a very few seconds. The awakening was equally prompt. Within two minutes from the time he laid upon the table he was standing on the floor. Upon being questioned, he said that he was perfectly himself, and had felt nothing whatever of the operation. He asked whether all was over, and when assured of it, he put on his hat and walked out of the room. Within six minutes from the time of his arrival he was again passing out of the entrance door of the hospital into the street, having, during this very short period, been ethylized, operated upon, and resumed his natural condition of feeling.

I might go on enumerating case after case, until my entire experience with the wonderful efficacy of ethyl, in all cases of what I now call primary anæsthesia, was gone through with, covering at this time over 400 inhalations. These three cases, however, will suffice to show how thoroughly the brain recovers its perfect functions after the deep but very transient impression brought about through the inhalation of the vapor of this potent agent. Persons who, only three minutes before, had been in such deep sleep that they were insensible to pain, now walking out of the operating room with a firm tread and with a clear brain.

On account of its activity, efficiency, and the evanescent nature of its narcotic effects, the bromide of ethyl has become my favorite anæsthetic for all surgical cases, in which, by quick manipulation, I can perfect a painful operation in a short period.

Experience, by daily administration, has taught me this very valua-

ble lesson, viz., that the Bromide of Ethyl is not an anæsthetic which can be advantageously repeated or its inhalation be continued for any length of time. This is one of the serious mistakes which we made in our early experiments and which induced me, through ignorance, to discard the new agent as unreliable.

Its wonderful action is obtained during the first minute of its inhalation and what I have called its primary anæsthesia.

In cases, in which from some interference with the rapidity of the manual of operative procedure this primary anæsthesia wears off, and a second, and even more numerous administrations have to be made to keep up the anæsthetic state until the operation can be completed, while the narcosis can at all times be reproduced, nausea is very apt to follow. By this frequent repetition of the inhalation, a mental depression is established, as from the continued use of chloroform or ether, which may last many hours.

Fortunately there are many surgical operations of a very painful nature which can be perfected within the short period of a primary ethyl narcosis. Abscesses can be lanced, cysts emptied, sinuses laid open, wounds probed, strictures incised, muscles divided, ingrowing nails removed, surfaces cauterized, examinations made necessitating painful manipulations, and even amputations may be performed. It must not be forgotten that prior to the discovery of anæsthetics, Mr. Liston urged the general adoption of flap amputations, because all painful cutting, including the sawing of the bones, could be completed in so many seconds and did not require minutes at the hands of dextrous surgeons.

In Eye and Ear Surgery, in which I am now exclusively interested, the irritable eyes of children can be carefully and thoroughly examined, tumors can be removed from the lids, abscesses punctured, orbital sinuses explored, the lachrymal canals laid open, the nasal ducts probed, foreign bodies removed from the cornea, canthotomy practiced, crossed eyes straightened, the operation for artificial pupil perfected, ingrowing lashes destroyed by the cautery, needle operations for soft or capsular cataracts effected, and even optico-ciliary neurotomy completed. All such operations I perform now under a primary ethylization, if the patient exhibits any timidity or expresses a desire to be put to sleep. Cataract extractions, enucleations and many lid operations require more time for their safe performance than ethyl narcosis permits. If every preparation be made in advance, instruments arranged in the order in which they are to be used, and

placed within easy reach, and if the surgeon is able to manipulate with dexterity, it can be readily seen that a very large part of the painful procedures of surgical practice might be made altogether painless by taking advantage of the wonderful nature of ethyl narcosis.

In Eye Surgery I not only use ethyl daily, but if deprived of it would feel that I had lost one of my very best assistants.

What can be more satisfactory than the correction of that ugly deformity, squint, under the perfectly quieting influence of the bromide of ethyl, in less than one minute, to cover ethylization and the tenotomy? In fifty-two seconds, as measured by the stop-watch, I have ethylized the patient and completed the division of the faulty muscle. The patient, quite himself in two minutes more, finds the ugly deformity gone, and without the slightest knowledge, on his part, of how the wonderful transformation has been brought about. This was my most expeditious operation. In the presence of the large medical class of the University of Maryland I have repeatedly completed the entire operation for the correction of squint, including the whole time necessary for the administration of the anæsthetic, in less than sixty seconds, as measured by the stop-watch.

To use the bromide of ethyl effectually, one must have confidence in himself and also in the safety of the agent which he is administering.

For long operations, or such as I desire to complete slowly, I prefer to administer chloroform, an anæsthetic with which I have had long, extensive and uninterruptedly satisfactory experience. *Of over 12,000 patients, upon whom I have operated under the narcotic effects of chloroform, I have not lost one.* These patients cover organic disorders of heart, lungs, kidney or visceral disease, in persons of all ages, from the child only a few days old to my oldest chloroform administration, a very old man of ninety-six. Some were strong while others were very feeble. I never refuse the comforts of an anæsthetic to any person upon whom I have to operate.

Chloroform has always served me so faithfully that I have never had any good reason for transferring my allegiance to sulphuric ether. I now and then use ether, but only at long intervals. Should a patient express any positive objection to chloroform, and desire that ether be administered in his case, I always carry out his wishes. When the selection of the anæsthetic is left to me, and it usually is, my preference is decidedly for chloroform. I use chloroform so freely that I buy it literally by the gallon or in seven-pound bottles, many of which I have emptied. Of sulphuric ether I still have a

pound bottle, which has been in my possession already five years, with contents not yet consumed. I believe that sulphuric ether is as safe as chloroform, but not more so. I know it to be more disagreeable in its odor and much more unpleasant in its inhalation. I believe that either chloroform or ether, when carefully given in accordance with well-known laws, which should always be observed in the inhalation of anæsthetics, will with few very rare exceptions carry safety in its train. I also believe that if proper care be not taken, trouble may come to both patient and surgeon regardless of the agent selected. Some physicians have much more anxiety while using anæsthetics than others, not because they have a worse class of patients, but because they have never acquired the necessary confidence in the article they use, nor do they feel the necessity, under conviction, of always having and observing fixed rules for their guidance in the use of these powerful agents.

After an experience of thirty years of an active surgical practice, I still hold chloroform to be the best of anæsthetics for tedious operations, provided certain simple rules are adhered to in its administration. I can enumerate them in a very few words:

1. I always, *without a single exception*, give a strong drink of whiskey, from one to two ounces, to every adult to whom I intend to administer chloroform. This is done a few minutes before they get on the operating table. Because I never omit this fundamental law, and in advance sustain the heart against the depressing effects of the anæsthetics, in not one of my 12,000 cases have I ever had to use, in a single instance, a hypodermic of whiskey. It is already in the stomach should it be needed, and can do no harm if not required.

2. Always loose the neck and chest clothing so as to have no impediment to respiration.

3. Only administer chloroform in the recumbent posture with body perfectly horizontal and head on a low pillow, this pillow to be removed as the anæsthesia progresses.

4. Give chloroform on a thin towel folded in conical form with open apex, so that the vapor, before inhalation, will be freely diluted with atmospheric air. In holding this cone over the face of the patient at some little distance from the nose, place the fingers under the borders of the cone for the double purpose of allowing air to enter freely, and also to prevent the chloroform liquid on the towel from coming in contact with the skin of the patient's face, and thereby avoid its blistering effects.

5. Should loud snoring occur, force up the chin. This manipulation, by straightening the air passages from the nose to the larynx, makes easy breathing. The forcible elevation of the chin is far better in every respect than pulling out the tongue. It is easier of application, more quickly done, requires no instruments, and is much more efficient in removing the impediment to respiration.

By always following these five simple rules I have had, so far, both safety and comfort in the administration of chloroform.

Possibly one very strong reason why I have been so successful in the administration of chloroform is, that as a specialist in eye surgery, the inhaler must be removed from the nose before I commence the surgical manipulations. Besides, while operating, I have constantly in view both the color of the face and the respiration of the patient, which I consider even more important for the surgeon to observe than to feel the pulse. When surgeons are operating on distant parts of the body and cannot watch the work of the administrator of chloroform, accidents are most apt to happen.

In the inhalation of the bromide of ethyl all of these rules laid down for the establishing of chloroform narcosis are not necessary, and some of them cannot be followed out.

The recumbent posture I consider essential for the safe administration of any anæsthetic, whether it be chloroform, ether or ethyl; hence, these agents are not safe remedies at the hands of dentists, who place their patients in a sitting posture. Preparatory to the inhalation of the bromide of ethyl I have not found it necessary to give whiskey. The only precaution I take is to loose the neck clothing and have the patient lie down with the head only slightly elevated.

My experiments have taught me that the mode of administering the ethyl should differ totally from that used in giving chloroform.

Instead of a chloroform vapor freely diluted with atmospheric air, a saturated ethyl vapor must be inhaled, to the exclusion of atmospheric air, in order to obtain speedily and effectually narcosis.

In my early experiments with this new agent I had not yet discovered this fundamental principle, and hence did not obtain good results. I voted bromide of ethyl a failure because, in common with other experimenters, I was too timid, or rather I should say, too ignorant of its peculiarities, to push the ethyl vapor in the concentrated form, which I have since found necessary to obtain good results. By my present method of administering it, I can obtain perfect ethylization in patients in from twenty to sixty seconds, and have no after consequences of nausea or dullness of feeling.

The best inhaler for the giving of the bromide of ethyl is a thick towel folded into the form of a small cone with closed apex. Between one of the folds of the towel I place a sheet of paper, which makes the cone nearly air tight. The base of the cone must be wide enough to enclose both mouth and nose. The soft material of which the inhaler is made enables the rim to be kept firmly in contact with the face, so as to exclude air from entering. I always instruct the patient how to make long inspirations, and inform him that he must do this, notwithstanding the fact that he will feel somewhat stifled. I also try to give him confidence by assuring him that a very few inspirations will put him to sleep. Usually I make him go through the process of strong respiratory movements in advance, so that he will know exactly how to proceed. Into this towel cone I pour about one drachm of the bromide of ethyl, and immediately invert the inhaler over the nose and mouth of the patient, holding its edge down firmly over the face. There is no fear of creating asphyxia, as all air can not be excluded, and the height of the cone makes a considerable air chamber into which the patient breathes.

Children usually struggle to escape from the apparatus. *The cone, however, must not be removed from the face for an instant until anæsthesia is produced.* At first some patients will resist the breathing of the vapor, but there is no fear that they will not catch their breath in time. Should children cry, it only insures inspiratory efforts, which the more surely and quickly will bring about the introduction of the vapor into the lungs. As a rule, a dozen full inspirations are all that are needed to produce deep narcosis. I recognize this desirable condition by a stoppage of all struggling. I have had deep sleep brought on by the sixth inspiration, when complete relaxation ensues, with quiet breathing, and an absence of reflex irritation should the conjunctiva be touched. The patient retains the usual healthy color of lips and cheeks as if in ordinary sleep, and the pulse becomes slower and stronger as the narcosis becomes profound. Thirty seconds, as a rule, is sufficient to bring about this desirable condition, and have the patient ready for operation.

I have not found this anæsthetic sleep last more than two or three minutes, often not so long.

Usually the patients awake suddenly and as completely as they would do from ordinary sleep. They are able to get down from the operating table without assistance and walk off without staggering, and with brain clear to answer correctly any question: in fact, quite themselves.

It took me some time to acquire such confidence in the safety of the remedy as to apply it in the concentrated form needful to obtain its fullest benefits. To the uninitiated it looks like cruel work to keep the cone of a saturated ethylized vapor over the face of a struggling patient. *I am convinced, however, that in no other way can quick, complete and safe anæsthesia be obtained by it.* Fortunately, the struggling is very soon over, and quiet sleep speedily ensues.

My experience with the bromide of ethyl will now exceed 400 cases, of which upwards of 300 are within the past year. I am beginning to be familiar with its administration and its effects. *I now know what is to be obtained by it, and what not to expect from it.* I give it without hesitation, in any case, to avoid painful manipulation. I have used it as often as six times a day, and I administer it, on an average, certainly once every day. In the last week I have given it fifteen times. For office use I find it invaluable, on account of its promptness, efficiency, evanescent nature of the anæsthesia induced, the absence of nausea, and the perfect comfort with which patients operated upon can leave my office within a few minutes after the ethylization. Its use in my every-day experience does not interfere with the routine of office practice, nor occupy more time than I give to an ordinary office consultation, a very important desideratum to those who have restless patients awaiting their turn in the reception room.

Those who will use it by a single inhalation, to produce a short, deep sleep, and not resort to a mal-administration of this very valuable, powerful agent for a continued anæsthesia, which it is incapable of sustaining in safety and in comfort, will become as enthusiastic as I am over its brilliant results. They will in time learn to consider it, as I do, the most perfect of anæsthetic agents for quick, painful surgical work. It can never take the place of chloroform or sulphuric ether where any heavy operations are to be done. These well-known and tried anæsthetics must continue in favor for all tedious operations, and will be used in minor surgery by those who manipulate slowly and do not have prompt, quick assistants. But when one can take advantage of a primary anæsthesia from the first administration of the bromide of ethyl, and having made every preparation in advance, will manipulate quickly, the new anæsthetic leaves nothing to be desired.

I will repeat, "can anything be more brilliant in surgery than a successful operation for squint, where an ugly deformity of years' standing is promptly, thoroughly, safely and surely removed in less than one minute of time—fifty-two seconds for ethylization and operation?" This is the nearest approach to magic in the art of surgery.

BOOKS AND PAMPHLETS.

FIFTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF CONNECTICUT.

[Edited by C. W. Chamberlain, M. D., of Hartford, Secretary of the Board.]

This valuable contribution to the literature of sanitary science presents on its four hundred and fifty-six handsomely printed pages besides an abundance of material of importance to the physician and those interested in science generally, much that is of especial value to the dental practitioner. The work contains the general report of the Board for the fiscal year ending November 30, 1882, report of the Secretary and Treasurer, and some thirteen original papers by men of ability, a number finely illustrated by numerous wood cuts and plates. The paper entitled Epidemic Intermittent Fever, by G. H. Wilson, M. D., is accompanied by a large drainage map of Connecticut with isochronal lines showing the annual progress by towns of malarial disease through the State. The last one hundred and twenty-eight pages are occupied by registration reports of the Bureau of Vital Statistics, presenting many interesting features, as well as showing at a glance that the Secretary of the Board of Health is *not* an officer whose only duty consists in drawing his salary. Taken as a whole, the report is of great value, and we think the best that has yet been issued. We congratulate those who are so fortunate as to possess a copy.

Dr. Dennis in his paper entitled "Hatting as affecting the Health of Operatives," adds one more to the list of trades injurious to health. It seems that hatters are particularly prone to mercurial poisoning, and according to a paper read before the New Jersey Medical Society in 1860 one hundred cases had occurred in the town of Orange alone. The symptoms were "swelling and ulceration of the gums, loosening of the teeth, fetor of the breath, abnormal flow of the saliva, tremors of the upper extremities, or a shaking palsy and frequently some febrile action." "These cases recovered under the usual remedies for mercurial salivation, especially iodide of potassium, or without any treatment if the work was abandoned for a time. This disease occurred exclusively among the hat finishers, and, the presence of mercury having been established by chemical tests in the hat bodies before going through the process of finishing, it seemed clear that the hot iron volatilized the mercury, and the close, ill-ventilated rooms favored the absorption of it in the system, and so the workmen were poisoned.

The greater prevalence than usual of the disease at that time was found to be due to the use of a larger amount of mercury in order to render poor materials fit to work up into hats." . . . . . "The preparation of the fur for hatting is called 'carroting' and the chemicals are called 'carrot' from the fact that their action on the hair colors it yellow like the vegetable of the same name. A mixture is made consisting of one pound of quicksilver, three pounds of nitric acid, and thirteen pounds of water; this is stirred with heat until the quicksilver is entirely dissolved, thus forming a strong solution of nitrate of mercury." . . . . . "For years in the shops of Great Britain 'carroting' was done with a mixture of one pint of nitric acid and four parts of vinegar, and the felting was aided by mixing with fur a certain proportion of Saxony and Spanish lamb's wool. Consequently the workmen were entirely free from mercurial diseases."

"How can we Escape Insanity," by Chas. W. Page, M. D., Assistant Physician, Retreat for the Insane, Hartford, is a well-written essay showing careful study of the subject under consideration. As we are in hopes of making extracts from the paper for this *Journal* at an early date we will simply remark here that should we be called upon to prepare an article on the predisposing cause of dental caries we could find most of the material needed in this one paper. It is worthy of careful perusal.

Now that the germ theory of disease is being looked into so thoroughly by some in our profession as a factor in dental caries and other oral diseases, the following papers will be found interesting and instructive: "Microscopical Examination of Potable Waters in the State of Connecticut," by Wm. J. Lewis, M. D.; "Milk as a Medium for the Transmission of Disease;" "Some of the Organic Impurities of Drinking Water;" "Impure Ice," by C. W. Chamberlain, M. D., and "Protective Inoculation," by Noah Cressy, M. D., V. S. In these papers one can revel and become "hail-fellow-well-met" with such lively boys as *Cyclops Quadricornis*, *Canthocamptus Minutus*, etc., besides making the acquaintance of the five germ families, *Micrococcus*, *Bacterium*, *Bacillus*, *Vibrio*, and *Spirillum*.

There seems to be an increase of interest in all matters relating to health and sanitary science, but the limited space at our disposal will not permit of a more extended reference to the valuable matter contained in the report. G. L. P.

NOTES ON OPERATIVE DENTISTRY. By Marshall H. Webb, D. D. S. The S. S. White Dental Manufacturing Company, Philadelphia.

Soon after the death of the lamented Dr. Webb, the announcement was made that the above company had in press, and would soon issue, a work on Operative Dentistry by Dr. Webb, prepared during his long sickness, and completed just previous to his death. This work now appears, and will be hailed with both pleasure and sadness—with pleasure because, though dead, he once again speaks in this his last work; with sadness, because of the renewed remembrance that this must remain his last work.

Coming as it does just as we go to press, we cannot now attempt a review. We simply wish to call attention to its issue. It is a neatly printed and bound volume of 175 pages, profusely illustrated, descriptive of the methods in detail of treating and operating practiced by the author, giving "those only which have proved to be—not the easiest but—the very best."

Not the least attractive feature of the book is a most excellent frontispiece of the well-known face of the author.

The table of contents is as follows: "Histology," "The Deciduous Teeth," "Prevention of Irregularity and Decay," "Application of the Rubber Dam," "Preparation of Filling Materials," "The Mallet," "Filling Cavities in Masticating Surfaces," "Filling Cavities within Labial and Buccal Walls," "Pieces of Porcelain for Filling Cavities of Decay," "Filling Cavities within Approximal Walls," "Preparation of Cavities for Restoration of Contour," "Restoration of Contour and Prevention of Extension of Decay," "Summary of Principles Relating to Filling Teeth," "Covering and Protecting Frail Walls of Enamel with Gold," "Placing Crowns on Roots of Teeth," "Attaching Crowns to Teeth where Roots are Missing," "Irritation and Death of the Pulp," "Filling Pulp Chambers," "Treatment of Abscess," "Pericementitis" and "Necrosis."

The world-wide reputation of Dr. Webb as an operator will ensure for his "Notes" on the above subjects a large and rapid sale.

We have received the February number of Die Vierteljahresschrift des Vereins deutcher Zahnkünstler, edited by August Polcher of Dresden. Office Dresden an Markt 3 & 4. It is a very rich number, full of practical as well as theoretical suggestions and papers. We are indebted to the Journal for some of our selections.

Cranial Nerves—William O. Thrailkill, M. D., D. D. S., Oakland, California. This is a chart giving the names, place of origin, foramen of exit, principal distribution and function of each of the cranial nerves. A good thing to frame and hang in one's office. Price 56 cents.

Bromide of Ethyl, the Most Perfect Anæsthetic for Short, Painful Surgical Operations, by Prof. Julian J. Chisholm. We consider this paper so good that we give it in full in this number.

First Annual Announcement of the Collegiate Department of the Chicago Dental Infirmary.

The Fourth Annual Report of the Massachusetts State Board of Health, etc.

Annual Catalogue of the Dental Department of the University of Maryland.

The Fifth Annual Report of the Connecticut State Board of Health.

A Directory of the Dentists Practicing in the State of Georgia.

Transactions of the Illinois State Dental Society for 1882.

SOCIETIES.

UNION DENTAL CONVENTION.

The Massachusetts and Connecticut Valley Dental Societies will hold a three days Union Convention in Gill's Hall, Springfield, Mass., June 6, 7 and 8, 1883.

ORDER OF EXERCISES.

Executive and Section Committees will meet promptly at 10.30 Wednesday morning, to perfect and determine the order in which the programme shall be taken up.

Routine business meetings of the two Societies in the ante-rooms of the hall at 11 o'clock, A. M.

The joint convention will be called to order by Dr. F. SEARLE, President of the Mass. Dental Society, at 2 o'clock, P. M.

SECTION 1. Anatomy, Physiology, Histology and Microscopy.
Dr. S. E. DAVENPORT, New York, Chairman.

Paper—Recent Developments in Microscopy.
By Dr. R. R. ANDREWS, Cambridge.

SECTION 2. Pathology, Therapeutics, Etiology and Diagnosis.
Dr. C. T. STOCKWELL, Springfield, Chairman.

Paper—The experiments, observations and conclusions of Dr. W. D. MILLER, of Berlin, Germany, concerning Dental Caries, to be illustrated by drawings, diagrams and microscopic sections.
By Dr. W. C. BARRETT, Buffalo, N. Y.

Paper—Needed foundations for theories in dentistry.
By Prof. CHAS. MAYR, Springfield.

SECTION 3. Chemistry, Materia Medica and Anæsthetics.
Dr. E. S. NILES, Boston, Chairman.

Paper—Chemistry of Decay. By Dr. E. S. NILES, Boston.

Paper—Amalgams. By Dr. T. H. CHANDLER, Boston.

SECTION 4. Surgical and Operative Dentistry, Education and Literature. Dr. L. D. SHEPARD, Boston, Chairman.

Clinic—Bonwill Crowns. By Dr. W. G. A. BONWILL, Philadelphia.

Clinic—Buttner Crowns. By Dr. H. W. F. BUTTNER, New York.

Clinic—Brown's method of setting crowns.
By Dr. E. PARMELY BROWN, Flushing, N. Y.

Clinic—Crowns. By Dr. A. H. BAKER, Boston.

Paper—Fisk Caps and method of application.
By Dr. H. C. MERIAM, Salem.

SECTION 5. Mechanical Dentistry and Metallurgy.
Dr. C. F. BLIVEN, Worcester, Chairman.

Clinic—Method of taking impressions of Roots, and improvements in gold attachments. By Dr. H. A. BAKER, Boston.

Paper—New instruments and ways of making them.
By Dr. C. F. BLIVEN, Worcester.

There will be papers by Dr. BONWILL, and other eminent men, the subjects of which we cannot now announce.

The Executive Committees have such assurances from all sections, that they are preparing for the largest gathering of the Dental Profession ever held in New England.

The Connecticut River, Vermont Central, and New York and New England Railroads (except from Hartford), will give return Checks to all attending the Convention. The Boston and Albany Road will sell round trip tickets at Boston for $3.90, at Framingham, $3.10, at Worcester, $2.20, at Pittsfield, $2.20.

Hotel Charges. Hotel Warwick, $2.00 per day; Haynes House, $2.50; the Massasoit, $3.00.

The Executive Committees wish those who may have specimens or models of cases in practice, instruments, materials or new appliances, or papers not already announced, or any subject or matter to bring before the Convention, would notify them at as early an hour on Wednesday as possible.

D. F. WHITTEN,
S. B. BARTHOLOMEW, } *Chairmen of Ex. Committees.*
W. E. PAGE, Boston, *Secretary M. D. S.*
A. ROSS, Chicopee, *Secretary C. V. D. S.*

NEW YORK DENTAL SOCIETY.

At the annual meeting of the Dental Society of the State of New York, held in Albany May 9 and 10, the following officers for the current year were elected, viz.:

President—Dr. L. S. Straw, of Newburgh.
Vice-President—Dr. Wm. Jarvie, Jr., of Brooklyn.
Secretary—Dr. J. Edward Line, of Rochester.
Treasurer—Dr. H. G. Mirick, of Brooklyn.
Correspondent—Dr. W. H. Atkinson, of New York.
Censors—Drs. N. W. Kingsley, of New York; Wm. Jarvie, Jr., of Brooklyn; S. D. French, of Troy; W. H. Colegrove, Johnstown; S. B. Palmer, of Syracuse; A. M. Holmes, of Morrisville; F. French, of Rochester, and A. P. Southwick, of Buffalo.

The President announced the following Committees:

Arrangements—Drs. Wm. F. Winne, Albany; E. C. Butler, Albany; H. A. Hall, Troy.
Publication—J. Edward Line, Rochester; F. French, Rochester; C. Barnes, Syracuse.

The remaining Committees will be transmitted to the Secretary when made.

NEW HAMPSHIRE DENTAL SOCIETY.

The sixth annual meeting of the New Hampshire Dental Society will be held at Phenix Hotel, Concord, Tuesday, June 19, 1883, at 11 o'clock, A. M., continuing during day and evening.

The Board of Censors will meet for the examination of candidates for licenses at Phenix Hotel, Monday evening, June 18, at 7.30 o'clock.

Dentists of the State are cordially invited to be present at the meeting.

R. R. fare, half-rate.

E. B. DAVIS, *Secretary*, Concord.